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Teacher Attitudes Towards Integrating Technology in Literacy Instruction

By

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A thesis submitted to the Department of Education of The College at Brockport, State

University of New York, in partial fulfillment of the requirements for the degree of

Master of Literacy

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Abstract

This research study explores the use of one-to-one technological devices in the classroom during literacy instruction. The purpose of this study was to learn more about teacher attitudes towards using technology during this instructional time. Data were collected over a 5-week period including student artifacts or work that was created on Chromebooks during literacy instruction and semi-structured interviews with teachers. Data were analyzed to determine how the devices were used in the classroom, teacher attitudes towards using the Chromebooks, and how professional development impacted teachers' use of the technology.

Table of Contents

Introduction	5
Topic and Research Problem	6
Rationale	7
Purpose of Project	8
Research Questions	8
Literature Review	9
Definitions of Integration	9
Professional Development	11
Teacher Attitudes and Uses of Technology.....	13
Methodology	16
Participants	17
Setting	17
Positionality	18
Methods and Data Collection	18
Trustworthiness	19
Procedures	19
Data Analysis	20
Finding One	21
Finding Two	27
Finding Three	30
Discussion	34
Conclusions	35

Students are more willing to participant	35
Effective professional development matters	36
Research has become easier.....	38
Implications	39
Teachers should use Chromebooks to engage all students	39
Offering effective professional development	40
Teaching students how to research	41
Limitations	42
Suggestions for Future Research	42
Overall Significance	43
References	44
Appendix	48

Introduction

When I was in elementary school, we had four computers in the classroom and five computers that were available to students in the library. That was it. Today, I have 18 Chromebooks, enough for one per student, available in my classroom. My school as a whole has just as many technological devices as students. Tens of thousands of dollars have been set-aside in my district so that each student will have their own Chromebook by the 2017-2018 school year. I wonder how my experiences would have been different if this type of technology was available to me when I was in school. I also wonder what having an abundance of technology in the classroom is like now for teachers. For some teachers, having technology available in the classroom is all that they know. For others, they remember a time when students would only get on the computer to play Oregon Trail at recess. Now, students can read, type, and listen to stories while on their device. Students can also create almost any type of project since a plethora of educational websites are at their fingertips. These changes have motivated me to explore teacher attitudes towards integrating technology with literacy instruction.

When thinking about this topic more, I realized how quickly technology worked its way into our everyday lives before exploding into our schools. I remember being amazed when some of my friends had laptops. Now they are handing them out to students when they arrive at school. Corn, Tagsold, and Argueta (2012) surmise that technology can improve instruction and that since it is so prevalent in our everyday lives, it will improve students' achievement and prepare them to be a citizen in today's digital world. Since school districts have made these predictions about their students, I wonder how teachers feel about the inclusion and integration of technology in their instruction. School

districts can do all of the research and take the steps to bring technology into the classroom. However, the teachers are on the frontlines and their beliefs about education and knowledge of technology is what will determine how it is integrated during instructional time.

Topic and Research Problem

The increase of technological devices has been drastic in many US school districts. Integrating this technology during instruction is difficult for teachers and one of the areas where it may be most difficult is during literacy instruction. According to Hutchison and Reinking, (2011) it is a teacher's definition of literacy integration that can determine just how much he/she integrates technology during literacy instruction. Technological integration can either be viewed as separate from the curriculum or as a full curricular integration. Low-level technological integration involves just using the technology to use it. The higher-level curricular integration embeds the technology into the curriculum and views it as an integral part of instruction (Hutchison & Reinking, 2011). Education is constantly changing with different instructional practices coming and going but technology seems to be here to stay. Teachers of all ages and experience levels need to be ready to adapt their teaching for the integration of technology.

Teachers have technology in their classrooms and in many instances are being required to use it during their instruction. However, "the extent to which integration has occurred, what obstacles inhibit integration, [and] how teachers conceptualize ICTs [information and communication technologies]" (Hutchison and Reinking, 2011, p. 313) are still being explored. Potential obstacles to teachers integrating technology during literacy instruction include: (a) not knowing how to use Chromebooks because of

ineffective professional development, (b) being unsure of how to integrate them during instruction, and (c) a false sense of what integration should look like. There is no doubt that the Chromebooks purchased by my district should be integrated during instruction but these are just some of the obstacles that could inhibit Chromebook use during literacy instruction and influence teacher attitudes. While making technology in the classroom a requirement, teacher attitudes towards using technology, especially during literacy instruction, should be explored.

Rationale

One to one technological devices are still new for many school districts. I have seen them integrated during instruction and I have also worked with and planned to integrate the Chromebooks during my own instruction. New teachers like me are not as familiar with the curriculum and may not yet have a cache of lessons and instructional practices that we have always done. There may not be a “we have always done it this way” attitude. New teachers face the challenge of learning new curriculum and planning lessons that integrate technology while more experienced teachers have a different set of challenges. More experienced teachers may need to change their existing teaching style and instructional units they have been teaching for years to integrate technology. The teaching landscape has always been changing but adapting instruction and curriculum to fit technology is a difficult task. Teachers’ attitudes and perceptions about technology play a role in determining just how much they are going to be integrating them into their instruction.

While teachers’ perceptions of technology in the classroom and in their everyday lives influences the role technology will play in their classroom, so does their

understanding of what the term technological integration actually means. All teachers or all districts may view integration of technology differently and no matter the definition, it plays a role in how often and for what purposes technology is used in the classroom.

Pang, Reinking, Hutchison, and Ramey (2015) state that “conceptualizations of what constitutes integration of ICTs” is one of the main reasons that more studies need to be done to determine teachers’ perceptions of integrating technology during literacy instruction (p. 11).

Purpose

According to Badia, Meneses, Sergi, and Sigalés (2015) it takes more than just a district to integrate technology in the classroom. Districts can buy the technology but teachers need to feel confident using the technology and they need to feel strongly about the benefits of using technology in the classroom. If teachers are going to feel confident with using the technology in the classroom, professional development needs to be effective in supporting teachers with integrating technology during instruction.

My purpose is to explore teacher attitudes towards using technology during literacy instruction. By next year, there will be a Chromebook for every student in my district. Through interviews with teachers and the exploration of student work, I want to find out what teachers think about using these devices for literacy instruction and how they are using the devices during literacy instruction. Since 1:1 technological devices are a fairly new addition to schools, this kind of study fills an area of research that will continue to grow as more districts move toward 1:1 devices.

Research Questions

- What are teacher attitudes towards integrating technology for literacy instruction?

- How do teachers define technology integration?
- In what ways are teachers utilizing Chromebooks during literacy instruction with 4th grade students?

Review of the Literature

The review of the literature that follows outlines important points that play roles in teacher attitudes towards integrating the Chromebooks and teacher uses of Chromebooks during literacy instruction. Research on professional development (PD) and educator definitions of technological integration provide a glimpse into what influences teachers' attitudes about technology on the classroom. This literature review also looks at constructivist and sociocultural theories and the role that they play in developing teachers' attitudes towards technology integration.

Definitions of Integration

How a teacher defines literacy is an indicator of how much teachers will use technology in the classroom and it is an indicator of how teachers will be using technology in the classroom. There are lower levels of integrating technology in the classroom and there are higher levels of integrating technology in the classroom. Hutchison and Reinking (2011) highlight the difference between “technological integration” and “curricular integration”:

Technological integration reflects a stance that views ICTs [Information and Communications Technology] as separate from, or not fully integrated into, the curriculum. Curricular integration, on the other hand, is associated with accommodation and higher levels, such as teaching specific skills related to using the Internet, and reflects a stance that views ICTs as integral to the curriculum, as called for in the IRA position statement identifying 21st-century literacy skills. (p.

314)

These two definitions will be important foundations for me to compare with how the 4th grade teachers in my study describe their views on technological integration. They may think that using the technology in the classroom is exactly what you are supposed to do with the Chromebooks but without purposeful curricular integration, true technology inclusion will not occur. These definitions of integration are echoed by Hughes (2013) who states that integration revolves around content specific use of technology for students instead of for teachers. Many times teachers will use the technology just for the sake of using technology but it is not student centered or truly integrated into the curriculum. This is not a higher-level use of technology. Pang, Reinking, Hutchison, and Ramey (2015) also assert that the integration of ICTs requires the “adopting [of] new curricular goals and creating instructional activities aimed at developing 21st century literacy skills” (p. 3). This is similar to the definition of curricular integration because if technology is going to be truly integrated into the classroom, it will change curriculum and prepare students for life outside of the classroom which is now dominated by technology.

Pang et al. (2015) found that when schools have higher-level views about what technological integration involves, their technological infrastructure rapidly advances and technology is quickly integrated into instruction. Hughes (2013) had similar findings involving pre-service teachers. When young professionals were taught how to use technology in the classroom, they were more likely to integrate technology during instruction. When schools and teachers view the integration of technology as important and have the materials and knowledge needed to bring technology into classroom,

curricular integration is more likely to occur. The definitions that teachers have of integration is a critical piece of this study because how educators view integration will help me analyze and understand how that impacts their attitudes and use of the Chromebooks during literacy instruction.

Professional Development

Professional development is a pivotal factor in altering teacher attitudes towards integrating technology during literacy instruction. Districts are spending hundreds of thousands of dollars on technology infrastructure and they need to make sure that the educators in all of their schools know how to use what is being purchased. Enter the importance of purposeful professional development.

DeMatteo and Brown (2014) found that teachers who attended a new literacies PD changed their views on what counted as literacy. They were more likely to include social media websites and videos into their definitions of literacy after attending the 4-day professional development. While their definitions of literacy broadened, they also changed their own feelings about technology in the classroom. After attending the workshop, educators thought that “technology was necessary in their teaching and that it helped them to be more creative and productive in the classroom” (DeMatteo & Brown, 2014, p. 42). However, these positive feelings did not come without some thoughts about the obstacles that accompany integrating technology in the classroom. Even though teachers changed their views on technology after the PD, using technology in the classroom was seen as difficult and teachers still felt like novices using the new equipment (DeMatteo & Brown, 2014). This hints at the need for professional development to be continuous, especially during a district-wide technology

implementation.

Other research also discovered the importance of professional development when implementing new technology into a school or district. Lei and Zhao (2008) suggest that one of the reasons that a 1:1 laptop initiative went well in a Northwestern US middle school resulted from the “convenient” and “sufficient” professional development opportunities that came from the workshops provided by the school, courses offered at a nearby university, and the weekly teacher meetings that allowed teachers to ask questions about and openly discuss the ongoing laptop integration (p. 103). DeMatteo and Brown (2014) also mentioned these types of positive professional development opportunities when they discovered factors that led to positive changes in teachers’ attitudes about using technology in the classroom. Teachers appreciated “knowledgeable, patient facilitators; time for guided practice with the tools; and collaboration and discussion with facilitators and colleagues” (p. 43). To promote the use of technology in the classroom, Petersen (2014) also states that collaboration and PD that encourages ideas of how to use the technology is necessary. Professional development opportunities with these factors have a greater chance of positively changing teacher attitudes. However, not all schools and districts make frequent, beneficial, and sufficient professional development opportunities available to their teachers.

According to Corn, Tagsold, and Argueta (2008) teachers’ main concerns about incorporating laptops in their classrooms involve the want for consistent professional development opportunities to help them effectively use the technology in their classrooms. A one and done approach to technological professional development does not support teachers. Corn et al. warn that administrators need not forget that when investing

so much time and money into technological infrastructure, professional development cannot be forgotten. When teachers see their colleagues' enthusiasm and commitment to integrating technology in the classroom, many educators will think more positively about integrating the technology in their instruction. Teachers appreciate those opportunities for meaningful training about the equipment. The success of any technology implementation in a district hinges on the quality and quantity of professional development opportunities within a district. The planning of these workshops does not go unnoticed by the teachers who will be required to integrate the new technology in their classrooms.

All of the professional development that supports teachers' education and integration of technology in their classrooms gives them time to construct meaning for themselves. Teachers' points of view are valued and during positive professional development experiences educators are given time to ask questions and collaborate with their colleagues. In doing this, teachers are given the most amount of ownership over their work since they are given time to improve technology integration in their instruction. These are the key concepts of a constructivist approach and will give the educators more opportunities to integrate the technology into their instruction which, has an impact on their attitudes towards using the new technology in their classroom (Saphier, Haley-Speca, & Gower, 2008).

Teacher Attitudes and Uses of Technology

Overall, research has shown teachers have a positive view of using technology in the classroom for literacy instruction (Corn et al., 2008). Using laptops in the classroom has given teachers a path to creating individualistic instruction for students, especially students with special needs, since there is so much content available online. Teachers of

students with special needs have positive views of technology integration because of the individualized instruction. Students can easily take assessments online if needed, students were able to listen to literature easily, students' files were more organized, and more diverse content was accessible for students and teachers (Corn et al., 2008). Teachers also enjoyed the increased communications that came with laptops and they saw an increase in student confidence as they became more familiar with using the laptops in school. These elements lead to teacher satisfaction with the new devices as they had continued opportunities to become more knowledgeable about the technology.

Hutchison and Reinking (2011) found similarly positive views of integrating technology during literacy instruction. Literacy teachers reported the importance of incorporating technology during their instruction because the benefits to children were moderate to large. 74 of the 92 teachers surveyed in this study were teaching in grades K-6, a time when literacy development is critical for children so the feelings of these teachers is valuable in determining how much of an effect technology can have for these children during literacy instruction. The majority of teachers reported using technological tools for presentation tools, research, and to supplement or replace existing classroom materials. While teachers in this study viewed the role of technology as beneficial, 66% of them reported technology as being supplemental to classroom instruction. This raises questions about the differences and similarities between supplementing instruction and being integrated into instruction (Hutchison & Reinking, 2011). Supplementing and integrating relates back to teachers' definitions of integration because higher-level curricular integration is more important than a supplemental role. The differences between supplementing and integration are important to distinguish when analyzing data

for my study.

The top uses for technology in the classroom were also supported by Pilgrim and Martinez (2015) who found that teachers recognize the need for students to use technology to critically analyze and research digital literacies while also giving them purposeful tasks when using the laptops. This draws connections to making sure students are not just using technology for the sake of using technology. In addition, looking at digital literacies through a critical lens is a 21st century skill since so much is learned from online articles. Lei and Zhao (2008) also discovered that students reported using laptops in school for researching information for schoolwork as the second most used activity on the laptops. Furthermore, out of the parents, teachers, and students surveyed about this 1:1 laptop implementation, teachers had the most overwhelmingly positive responses about the laptops being used during instruction. The largest areas where teachers said the technology helped was communication with students via email and blogs and communicating with parents (Lei & Zhao, 2008). Even though the 4th grade classrooms that I studied for my research do not include email, the positive views of the teachers speak volumes about the importance of technology being brought into the classroom.

Another take on teacher attitudes is that the teachers' own views on technology are most predictive of how much technology will be used in the classroom and are predictive of their attitudes towards using technology in the classroom. Badia et al. (2015) state that "the most influential factors are not part of the profile of the school as an institution but are more closely related to the technological profile of the teacher" (p. 9). The technological profile of the teacher refers to how comfortable the teacher is with

technology in the classroom and in his/her everyday life (Badia et al., 2015). Hughes, Kerr, & Ooms (2005) confirm these findings of a teacher's "technological profile" when they found connections between a teacher's own views on technology's role in the classroom and the likelihood of a teacher to include technology during instruction. The more comfortable a teacher is with technology outside of the classroom and the more frequently a teacher uses technology, the more likely s/he is to bring it into the classroom. Hutchison and Reinking (2011) also affirm the following:

If teachers perceived technology as important, they were more likely to have a positive stance toward its use in the classroom and its benefit to students, in which case they were more likely to integrate technology into instruction. (p. 329)

The importance of a teachers' own views on technology and the influence that it can have on the classroom shows a direct relationship with sociocultural factors. Pang et al. (2015) writes that teachers' own beliefs on technology may be one of the biggest factors that determine how much technological integration occurs. Teachers may alter their beliefs on technology in the classroom based on other sociocultural factors, as well. These include the availability of technology support, planning time associated with technology, and the districts' and/or schools' views on the importance of technology integration (Pang, et al. 2015). While districts can purchase the technological equipment, the sociocultural factors surrounding a district, which also include the professional development and teachers' own opinions, play a large role in determining technology integration and teacher attitudes.

Methodology

This study focuses on teacher attitudes towards integrating technology during literacy instruction. In addition, this study focuses on how teachers integrate technology during literacy instruction and teachers' definitions of technological integration. Data was collected using semi-structured interviews and by analyzing student work created on the Chromebooks during literacy instruction.

Participants

The participants in this study were selected because they are all teachers in my school who have one to one Chromebooks in their classrooms. The six teachers in this study teach fourth grade and all six of them are Caucasian. There are five females and one male teaching in this grade level. The teachers have similar levels of experience in the classroom ranging from kindergarten to fifth grade. In addition, this is the second consecutive year that all of these teachers have had Chromebooks for each student in their classroom. All six teachers come from a middle class background.

The 14 student participants that were selected for this study were selected because they are fourth grade students in these teachers' classrooms. English is the first language for all of these students. All of the work collected from these students was completed on Chromebooks during literacy instruction.

Setting

The setting for this study was a suburban elementary school that includes grades K-5 and is located in New York State. 38% of students in the elementary school receive free or reduced lunch. The school district has an average class size of 16 and the fourth grade at the elementary school for this study is no different. Each fourth grade classroom has as many Chromebooks as there are students. The Chromebooks are kept in a charging

cart in each classroom. The hallways and classrooms of the school are adorned with student work.

Positionality

My middle class upbringing, race, gender, personal beliefs, and education affect my role as a teacher researcher in the classroom. I am a white male in my 20's who graduated with a Bachelor's Degree from Nazareth College. Both of my parents went to college as well as my older sister and younger brother. I am currently going to The College at Brockport to earn my Master's Degree in Literacy. I am a fourth grade teacher in a suburban district of western New York. In addition, I have a positive attitude towards technology because it plays an essential role in my daily life. I also work to integrate technology in my classroom because I believe technology supports students' learning and it helps them become college and career ready. These factors helped me to analyze my data and research carefully and may have affected the lens through which I view my data.

Methods of Data Collection

Semi-structured Interviews: The first kind of data that was collected is semi-structured interviews with the fourth grade teachers. Interview questions can be seen in Appendix A. I recorded and transcribed the interviews in order to analyze teacher responses. Interviews uncovered teacher attitudes towards using technology during literacy instruction, how teachers view technological professional development, and how teachers define integration.

Literacy Artifacts: Work that students have created on the Chromebooks during literacy instruction was collected and analyzed. These items came in a variety of different forms depending on how teachers have been using technology during literacy instruction.

I collected this data to analyze how teachers have been using Chromebooks during literacy instruction and to determine what literacy skills students had to use in order to create/complete the task.

Trustworthiness

This study established trustworthiness by use of data triangulation. I collected different sources of data that supported the themes I chose for this research. This provides credibility to my study because of the variety of sources that supported my research topics (Clark & Creswell, 2014). My research advisor also analyzed my work to ensure the credibility of my research and findings.

Procedures

I interviewed teachers before, during, or after school depending on their preference. The interview took no longer than 35 minutes and teachers were able to skip any question that they did not wish to answer. The interviews were recorded to ensure the accuracy of any statements made and they were then be transcribed. Next I reviewed the interview to determine teacher attitudes towards integrating technology during literacy instruction. I also analyzed and discussed their views and definitions of integration as well as reported on the role that professional development plays in their use of technology during literacy instruction.

Work from three students in each of the six 4th grade classrooms was collected allowing for the work of fourteen different students and the variety of assignments to be examined. Student work was analyzed to determine how teachers use technology during literacy instruction and what literacy skills students used while working on the Chromebooks.

Analysis

In order to analyze and interpret my data, I used codes to first organize all of the data that I had collected. Shagoury and Power (2012) describe data analysis as finding patterns and piecing together all of the data like a puzzle. When looking at the data closely, we can understand our teaching and students' learning more clearly. The first action I took to begin my journey of data analysis was transcribing the audio recordings that I collected when interviewing the six fourth grade teachers. I made sure to label each interview with the teacher number and the date that each interview was conducted. Next, I collected work from fourteen 4th grade students that they had created during literacy instruction using the technology in the classroom. I was able to make connections between what the teachers spoke about in their interviews and the work that students created in the classroom according to teacher plans. Looking at both of these data points allowed me to focus on answering my research questions.

I coded the teacher interviews while looking for how teachers defined technological integration. In addition, I coded what teachers spoke of doing with the technology in the classroom and how they viewed student reactions to using technology in the classroom. I also took note of teacher attitudes towards using the Chromebooks for literacy instruction, which included analyzing what teachers said about technological professional development. I then looked at the student work that was created using the Chromebooks to determine what skills students used and strengthened when using the Chromebooks for literacy instruction. While looking at the student work, I determined what websites and applications were used during the creation of the products.

The purpose of my study is to explore teacher attitudes towards using technology during literacy instruction. I looked at my data to determine how teachers' definitions of technological integration affect their attitudes and to analyze how technological professional development impacts their attitudes towards using the Chromebooks during literacy instruction. Student work also helped me determine how teachers' attitudes impacted what they used the Chromebooks for in the classroom during ELA instruction.

When analyzing the data, I discovered themes embedded in my findings. Clark and Creswell (2015) state that themes are the central ideas that emerge from your research. In order to form my themes, I coded the data collected during interviews and thoroughly examined the work that students did with the Chromebooks during ELA instruction. I compared these two different forms of data and I found that teachers view technology as having a positive effect on student engagement since using technology is the world that students are growing up in. Teachers also have positive attitudes towards using technology during literacy instruction as long as it is used purposefully. They believe that the professional development has been helpful for their instruction and assessment and that the PD needs to continue in order for them to successfully use the technology in the classroom. When interviewing teachers and analyzing the student work, it is also evident that the Chromebooks are used heavily in the classroom for student research and that they have changed the ways children learn and teachers teach.

Finding One: Teachers view technology as having a positive effect on student engagement during ELA.

When teaching fourth grade students, keeping them engaged is a constant battle. During the teacher interviews, 83% of the teachers specifically discussed student engagement. Teacher 3 mentioned that the engagement in the classroom is at an all time high when the Chromebooks are being used. She said, “that’s the world they live in. That’s what their world is going to be. They’re much more engaged when they’re on their Chromebooks.” Teacher 3 reasoned further that students had grown up with technology and that it was going to keep advancing.

Engagement through peer collaboration. Teacher 3 also surmised that one of the reasons for students’ increased engagement comes from the students knowing that their audience could be bigger than the peers and teacher in their classroom. When creating something on the Internet, Teacher 3 states that students may correct capitalization and punctuation more and engage more with the work because they do not want to be embarrassed if somebody outside of the classroom were to read it. When working online, students consider their audience, which increases engagement and the quality of the work.

An example of a student writing for an expanded audience is seen in Figure 1 below. A student from a different class made the comments. The comments ultimately

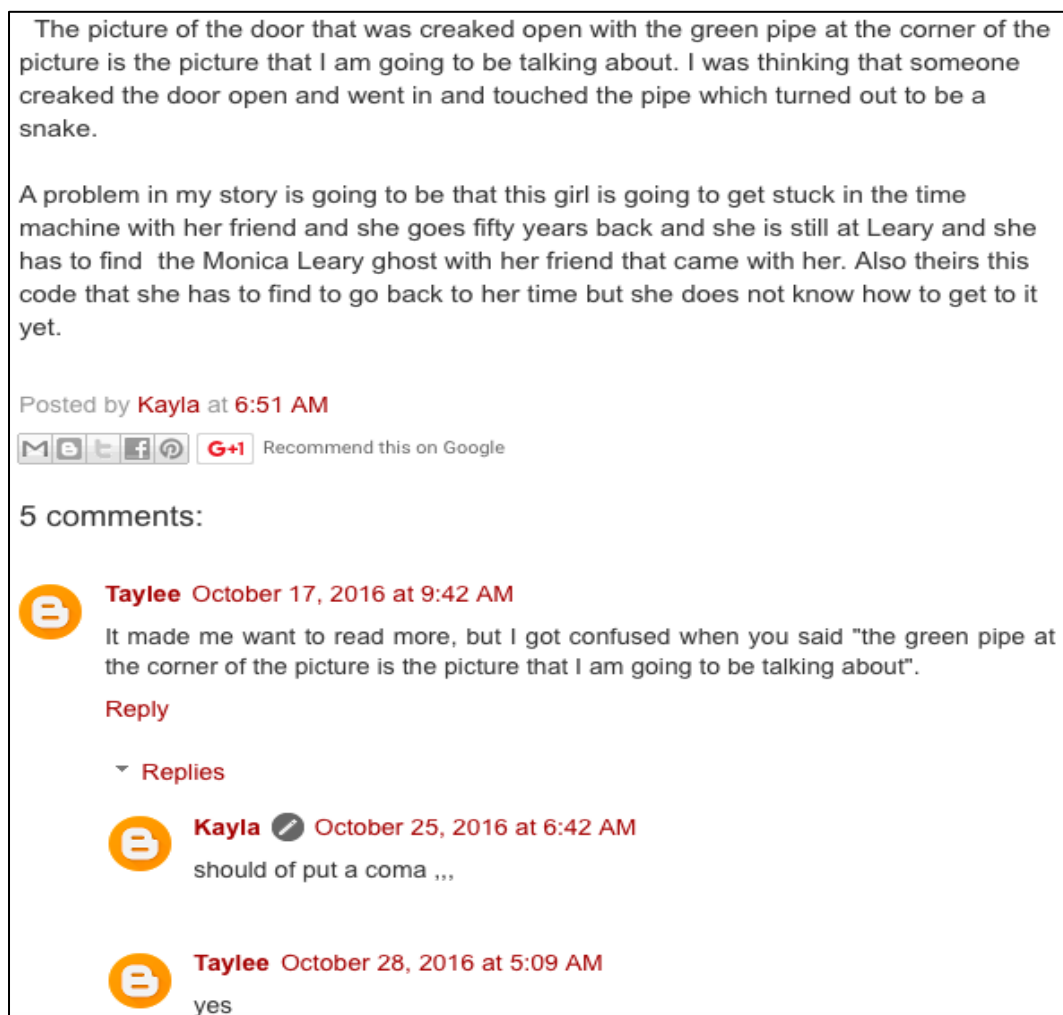


Figure 1. Students communicating on Blogger.com

helped Kayla and engaged her, just like Teacher 3 stated, because in the digital conversation that followed, the original author, Kayla, explained what she meant and fixed her work. This all happened while the two students were in different classrooms and happened over the course of one morning without any paper being exchanged. These students were able to communicate and engage one another on their own time.

Self motivated assignments. Another reason Teacher 3 sees the Chromebooks as having a positive effect on student engagement is because she sees students who are giving themselves assignments. During recess or when students complete any assigned work, a lot of them are given the opportunity to use the Chromebooks to create something. This “something” could be a short story, a chapter book, or a presentation on something that they are interested in. With the ability to easily create a Google Slides Presentation, collaborate on a story, and research details, student imaginations can run wild. Figure 2 is an example of a chapter book that a student has begun to write.

It was a dark night, Scarlet and Jack her brother were at school at 10:30p.m. They love hunting ghosts together. One day a janitor that lives in their neighborhood. The janitor said that when he cleans the school he hears weird noises...

Chapter 1

"So this is the place." Said Jack "Yeah." Said Scarlet "Scarlet I'm not so sure about this place." Said Jack "Are you scared." Said Scarlet "No...maybe... a little... yes." Said Jack "Just follow me." Said Scarlet "I feel cold." Said Jack "You're always cold." Said Scarlet "Now I don't feel good." Said Jack "Stop trying to scar me because it's not working." "Sorry." Lets go in the cafeteria and see if someone is there. Scarlet there's someone in there." Said Jack "No there's not anyone in there... Who are you?" Said Scarlet "My name is Anna and I want your brother!" Said Anna "Why would you want Jack?" Said Scarlet "I want him now or else." Said Anna "Or else what?" Said Scarlet "I will possesse you too." Said Anna "Say what? How are you going to do that?" Said Scarlet "Oh well that's very easy all I have to do is put a ghost into you." Said Anna "So if a ghost goes into me it will control me?" Said Scarlet (A ghost goes in side of Jack) "Jack what happend?" Said Scarlet "I'm not Jack any more." Said Jack "Now we have a ghost King so we can rule the world." Said Anna

Chapter 2

"So Scarlet do you want to join your brother?" Said Anna "I think I'm going to run so be nice to my... Why are all of the doors locked? Oh yeah it's 11:00 p.m. Hello who are you?" Said Scarlet "Where are your wrost nightmare." Said Faith and Tayleee (Try and go inside of Scarlet.) "Did you just try to go inside of me?" Said Scarlet "Maybe. No we were waiting for the Girm reaper to raise so he can help as rule the world." Said Faith "So your a ghost too?" Said Scarlet "Yes." Said Faith "That makes a lot more sense. why in the world are there like ten millon ghost here?" Said Scarlet "If you don't know this place was built over a cemetery 60 years ago." Said Mrs. Downer "So when it was built, wait who are you?" Said Scarlet "Oh my name is Mrs. Downer." Said Mrs Downer "Wait are you a ghost?" Said Scarlet "No, a ghost named Allie trapped me in my classroom." Said Mrs. Downer "Well guess what were trapped in the whole school and my brother get possessed by a crazy ghost for his life, and he's the king of there army so yeah." Said Scarlet "Aw help me!" Said Mrs. Downer "Whats going on, whos there?" Said Scarlet "I'm your wrost nightmare." Said Tayleee "Why is everyone saying your wrost nightmare." Said Scarlet "Well because the world is going to end and you will get possessed or die." said Tayleee

Figure 2. An example of a chapter book that a student wrote using Google Documents.

It is not an assignment for class. It is something that the student is doing on her own time.

In addition to working on something independently, students show their engagement by collaborating on an assignment that is not for class. Figure 3 shows part of a play that students wrote and performed.

Jackie: Hi, my name is Jack 'o lantern but my friends call me Jackie. I am 11 years old and my birthday is on October 31. Let me tell you a story from when we first moved here. It all started when we were almost at our new house.
(Dads driving)

Zoey: Mommy Daddy I'm tired and I want my milk. I'm so hungry.

Jackie: Just be quiet and try to rest shhhhhhh!

Zoey: Fine

Dad: Where's Zoey?

Jackie He is in the back of the car sleeping.

Zoey: Are we there yet, are we there yet, are we, are we?

Jackie: Yes now be quiet!

Mom: Come on kids get out we are here.

Dad: Time for bed you have school tomorrow.

(All go to bed)

Scene

Mom: Wake up Jackie it's time for school so get dressed and eat and than get on the bus.

Jackie: Ok, bye.

(Go on the bus)

Maddie: It's the new kid, hey you, do you know what.

Jackie: What?

Maddie: There's a haunted house near the school and it is perfect for you.

Figure 3. A portion of a play that students write together using Google Documents.

Using the Chromebooks allowed multiple people to write and edit the play all at the same time. Choosing to give themselves extra “work” shows their engagement with using the technology that is now available in the classroom.

Kids are plugged in. Teacher 4 also affirms that when using the Chromebooks, there are “more high engagement opportunities” because the Chromebooks are something that “is part of their world.” Again, she is referring to the world of technology and how the kids in her class have grown up with the evolving technology that has now made its way into our classrooms. Teacher 4 stated that the technology was more engaging for students but she was also adamant that students can still be engaged without technology. Similarly, Teacher 2 knows that it appeals to the students more and even though using the technology was out of her comfort zone as a teacher, she forced herself to use the Chromebooks in the classroom because she knows that her kids are so engaged when using the technology in the classroom. Teacher 2 also made the claim that using technology is “their world” and that the students are “used to being on a device or reading things on a device.” When describing student engagement, she also used the phrase “plugged in” to describe the students when they are working on the Chromebooks. Even though teacher 2 struggles to use the technology as much as the students do, she makes sure to make use of it in her classroom because of what it does for the students.

Teacher 5 had an interesting take on how the technology impacts students’ engagement. It was explicitly mentioned that she thinks students are more engaged when using the Chromebook. However, she also stated, “there’s a few kids that will just click around to pretend to look busy. It’s the same kids that flip through the pages of a book and say they are reading.” She speculated that the kids might do this because the reading level is too hard if they are reading online or because they simply do not want to do the work. “The engagement level is higher but I think there is still opportunity to avoid.” Overall, however, “engagement is huge.”

When speaking about engagement, teachers also mentioned that using the technology is something that the students prefer to do so teachers purposefully incorporate the Chromebooks in their instruction. Half of the teachers discussed decisions students would make if given the choice to read, write, or complete an activity on the Chromebooks or using some other method. These three teachers all stated that the students would overwhelmingly choose to read, write, or complete an activity on the Chromebooks instead of using pencil and paper or using some other medium. Teacher 3 stated students would rather read a book on Bookflix, Trueflix, or Raz-Kids, all websites, instead of a paper book because it was more engaging for them. Teacher 1 discussed students choosing typing over writing because it was more entertaining for them and Teacher 5 said that “99% of students would choose a Chromebook if given the choice.” Since students are more engaged and more comfortable than past generations with using the Chromebooks, it makes it the obvious choice for them to use. In any classroom, student engagement is something that teachers need to achieve. With the technology available, teachers have more options to improve classroom engagement while creating projects or reviewing classroom material (Kirsch, Marlow, Pingley, Leonhirth, & Lownes, 2016).

Finding Two: Professional development about technology is most helpful for teachers when they are given choice and time to experiment with the technology.

A review of the literature found that teachers appreciate time to work with the technology when attending a professional development. If they learn something, it has been found that teachers then benefit from knowledgeable and patient presenters as well as time to use and explore the topic that is being presented (DeMatteo and Brown, 2014).

Most people like to be able to manipulate what they are learning about and the teachers interviewed are no different. The teachers mentioned that the district has been on a technology initiative for the last 3 years. In addition, they mentioned that every month teachers have at least one technology-based conference period. During these conference periods, teachers are introduced to new apps or websites and given subject areas they could be used in as well as other possible uses for the new technological tool.

Some of the teachers also stated that they are on the technology team at the school and that they try to incorporate grade level sharing at these once-a-month technology meetings because it seems to be the thing that the teachers want the most. This can include teachers physically sharing something or sharing something digitally since the whole district is on board with Google Drive. Furthermore, Teacher 3 encourages teachers of all technology experience levels to ask the Technology Assistant in the building for support or to invite him/her into the classroom. In this way, this type of learning aligns with what many teachers want. They want knowledgeable, patient support from colleagues and the ability to manipulate the technology during a technology conference period or in the classroom with someone who is experienced with the new technology.

Beyond receiving help in the building with technology professional development, Teacher 7 discussed the “Digital Learning Day” that was held district-wide two years ago. This teacher says that the district had the “right idea letting us choose things that interest us.” During this day of PD, teachers got to choose what technology sessions to attend based on their interest and ability level. Teacher 7 describes the process further by saying teachers would “[go] into those classes and [have] somewhat of an expert show us

what they use and how they use it. I wish they would do more of that rather than, you know, the repetition of looking at the ISTE standards and the lack of interesting things as far as technology goes for professional development.” All of the teachers interviewed preferred having the opportunity to choose what kind of PD to attend and learning from an “expert,” which in this case was another teacher in the district. After learning from the expert, teachers were given time to work with whatever tool the class was about. The educators want to make sure that teachers and the district learn as much as possible about the ever-changing capabilities of technology in the classroom.

Teacher 4 had a similar viewpoint to Teacher 7 and said that everyone bringing something to share, which was done at Digital Learning Day, was the most helpful because “you don't know what's out there until someone tells you.” She also stated that being given time to work with the technology at this event made her think about sparking the kids’ engagement more since she was more engaged while learning about the new technology that was available to use in the classroom. She also believes that her district is “ahead of the game” since they were able to hold an event where teachers were given choice and time to work. The PD also gives teachers something to bring back to their classroom. The variety of technological resources available to teachers is mirrored in the student work that I have collected for this study. Many of the ideas that teachers have used in their lessons and final products they have had students create have come from PD. Teacher 2 also mentioned learning about a website for 15-20 minutes then being given time to try it and explore. She stated that if she was not given the time to explore the website, she would not go back and do it on her own time. Working with a program immediately after using it was “more helpful” to her.

Teacher 5 was in agreement that this format, having work time, was the most beneficial. She asserts that the district makes an effort to educate teachers about all of the technology that is available for use in the classroom and she thinks the PD's that you get to choose the topic are the most helpful. Overall, the PD offered at the school was deemed to be helpful as long as there was an element of choice and time to practice. Other forms of PD were labeled as boring and not as helpful because it felt more like a chore than a choice.

With the ever-changing technology in classrooms come new standards to measure how teachers are integrating technology in the classroom. The International Society for Technology in Education (ISTE) compiled a list of standards associated with technology that go hand in hand with the Common Core State Standards for teachers and students. Teacher standard 5B states teachers will “exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others” (“Standards for teachers,” 2017). Teachers in the district of this study have been fulfilling this standard by attending the PD that their district offers and by sharing lessons and ideas with one another. The enormous 1:1 technological rollout in this district has been accompanied by an array of professional development opportunities to support the teachers.

Finding Three: Research is the most prominent use of technology during ELA instruction.

Before desktops, laptops, iPads, and Chromebooks were available in schools, there was less information and resources readily available to students when doing research in the classroom. Now, there is an endless amount of information and sources at

their fingertips in and outside of school. Using the Chromebooks as a research tool has expanded the notion of what we think of as literacy in the classroom because of the variety of texts that students can be exposed to (Burke, Butland, Roberts, & Snow, 2013).

When Teacher 1 was asked about using technology in the classroom for literacy instruction, she strayed away from the literacy aspect of using the technology but did state that, “you can use technology in different ways in any subject by researching.”

While talking about researching, Teacher 1 also discussed that her ELA instruction is more research based now than it ever has been because it is easier for students to access the information. When using research, she is also quick to point out that despite the advantages of having so much information available to students, she makes sure that she visits the websites her kids will use first to make sure that they are appropriate.

Similarly, Teacher 3 discussed the “immediacy” of using the Chromebooks in the classroom. In addition to keeping the kids engaged, it also gives them their research and information faster. Before, students would have to go to the library and find books that would fit their research topic. Then, research became faster since one still had to go to the library but was able to use desktops, laptops, or iPads. Now, there is a Chromebook for each student in the classroom. The information has moved closer and closer to the students and has become easier to access. In addition to the immediacy of accessing information, Teacher 7 favors the additional content that having the technology allows. “They [Students] can extend their learning experience, for times sake,” he stated. Saving time in the classroom is a huge benefit as well as enhancing the content using the Internet.

An example of students using research during ELA can be seen in Figure 4.

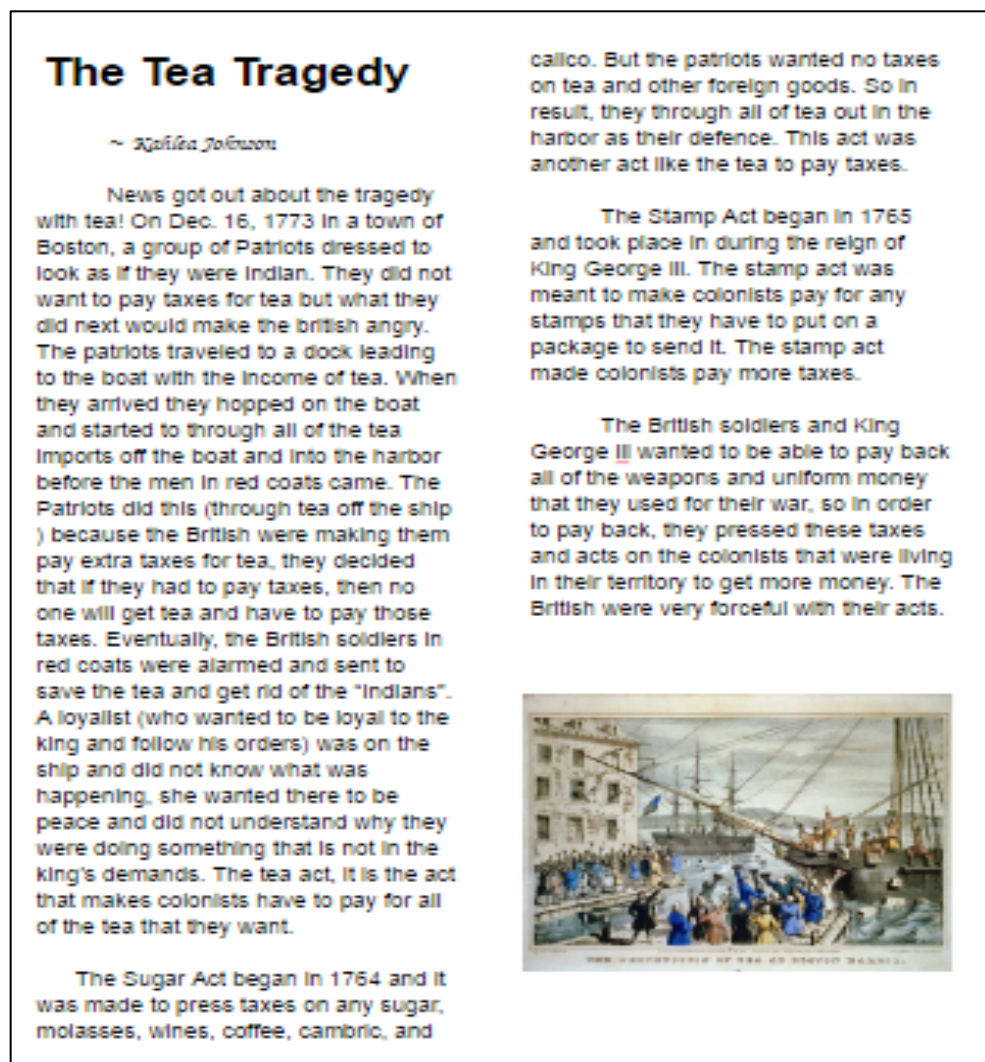


Figure 4. A social studies project completed on the Chromebook.

This project integrated social studies and ELA and required the students to write a newspaper article about an event from the American Revolution. The student had to research the event, format a newspaper in Google Slides, and write the article using the information that was gained through research. A historical picture was also a requirement for this project.

With the availability of the Chromebooks, Teacher 4 has also had students find more research articles during her ELA instruction. For example, one of the projects they are working on right now requires students to use Biography.com to find out information

about a famous person. Before doing something like this, she has made sure to research the people and sites that students will be working with. In addition to using these research websites, Teacher 4 also takes advantage of educational songs on YouTube and looks up poetry and other texts online. Teachers also use the Chromebooks so that students share the information they have researched using sites like Blogger and Smores which are internet based. Teacher 2 has begun having her students research a topic they are interested in and has been showing them how to present their research in an online form. She says there are “more resources at the tips of their fingers” so why not have them use it?

Students are also given the option of how they want to present their findings, increasing student engagement. Figure 5 shows Google Slides, but students can also present their research in a blog, with a movie, or with a written document.

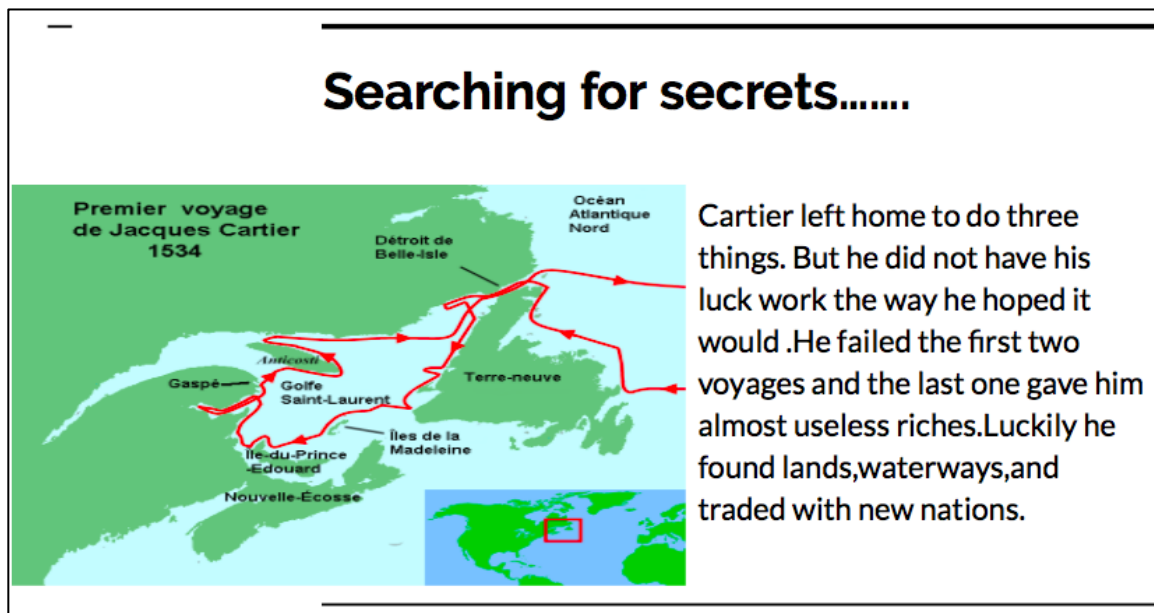


Figure 5. A slide from a Google Slides presentation about explorers.

The final product is what is displayed but the students did the most work when researching. The Chromebooks have not only allowed students to create digital final

products but they have also made it much easier for students to research a topic using a variety of sources. This allows students to conduct authentic investigations, and allows them to learn from their teacher and the research they are conducting (Dietrich & Balli, 2014).

Discussion

The purpose of this study was to explore teacher attitudes towards using technology during literacy instruction. This study concentrated on the following research questions:

- *What are teacher attitudes towards integrating technology for literacy instruction?*
- *How do teachers define technology integration?*
- *In what ways are teachers utilizing Chromebooks during literacy instruction with 4th grade students?*

While analyzing the data for this qualitative study, I found that teachers generally had a positive attitude towards using the Chromebooks during literacy. The foundation for this positive attitude stemmed from teachers believing that the Chromebooks increased student engagement during ELA. This supports previous research on technology integration (Boyce, Mishra, Halverson, & Thomas, 2014).

In order for teachers to feel positively towards the Chromebooks, data analysis also revealed that teachers wanted a constructivist approach taken towards professional development so that they were given time to make meaning about using the technology in the classroom (Vogt and Shearer, 2011). Furthermore, teachers used the Chromebooks for a variety of different literacy tasks, however, one of the most common uses of the

Chromebooks was for student research because there is so much data that is easily accessible to students since the technology is in the classroom already.

Conclusions

Students are more willing to participate when using the Chromebooks.

The 4th grade teachers interviewed in this study are working with students that have grown up with technology in a much different way than students of different generations. Dietrich and Balli (2014) go as far as stating that 4th grade students in this generation are called “digital natives” because of their lifelong interaction with the technology that is available. Using the Chromebook also engages students because “it offers novelty and variety compared to lessons taught in the traditional manner” (Dietrich & Balli, 2014, p. 29). Through the technology, students are learning from the teacher, from each other because of the digital collaboration that is available on the Chromebooks, and they are learning from the information they are exploring when conducting research. This keeps them engaged because it is more than just learning from the teacher. The technology is giving students access to information that used to only be available outside of school. Now students can tap into that information while they are in school making it a more authentic learning experience.

In addition to making the research more authentic for students, their audience can be much larger. Classroom activities and final projects can reach more than just the adults and peers in students’ classrooms. Not only does this engage students who recognize that their work matters but it also engages students in real world learning (Dietrich & Balli, 2014). Engagement also brought students to assign themselves work and to use the Chromebooks for their own literacy driven work. Students wrote books and plays

together on the Chromebooks in addition to editing work on Blogger outside of school. Since students growing up in this digital age use technology so much outside of the classroom, they are innately drawn towards using it in the classroom for their own enjoyment. Using the Chromebooks allows students to easily collaborate on any piece of writing and gives them access to a wealth of information. When a teacher can harness these interests, students are more likely to participate and be engaged with the work that they are doing. When a student is so motivated by the accessible technology in the classroom, it shows how much they are attached and involved with the literacy opportunities that they can provide. Student engagement is half the battle in any classroom and having the Chromebooks available can support teachers in getting students to participate during literacy instruction.

Effective professional development matters.

When something as big as technology in the classroom is the topic, school districts need to spend the time and provide a “clear vision” of what effective PD will look like (Hatlevik, Ottestad, & Throndsent, 2015, p. 223). This will ultimately benefit their students. The results of my study show that teachers have benefitted from effective professional development and that they want more of it, especially since the technology they have been acquainted with is here to stay and is always changing. Districts can purchase all of the digital devices that they want but until they educate teachers on how to effectively use them in the classroom, they will just be able to say that they purchased the devices for the district. Districts and teachers want to be able to share how the technological devices are enhancing learning and curriculum planning.

Time is a valuable resource in any setting. Teachers specifically mentioned that the professional development helped teach them about what they could use the Chromebooks for in the classroom and many of the student work supported that claim. New applications or ideas for literacy instruction using the Chromebooks that teachers learned while at workshops were evident in the student work. The professional development worked because it was impactful for teachers. Vogt and Shearer (2011) state that professional development and change go hand in hand. Teachers need to be guided through the changes that are happening in education and the addition of one to one devices is an immense change. Furthermore, the changes that a district is making may be taking place over a longer period of time which requires sustained, effective professional development (Vogt & Shearer, 2011). Educators that were interviewed were even worried that the district would become complacent with their professional development and teachers and the district as a whole would start to lag behind if effective PD stopped being conducted. Any learning opportunities for teachers need to be continued so that they can keep improving their practice.

It was evident in my data that the professional development experiences mentioned by the teachers mattered because of what they were able to bring back to their after the PD experience. That is the way PD should be. Constructivist and inquiry based approaches to PD are strongly encouraged when educating teachers on the technology that is available in classrooms because that is the style of learning their students will be experiencing (Tondeur, Forkosh-Baruch, Prestridge, Albion, & Shiyama, 2016). If teachers are given the opportunity to build their knowledge of technology in the classroom, they will be more inclined to give their students the same types of

opportunities. It should matter so much to teachers that it changes the way they interact with their students and the teachers. Professional development matters not only for the positive impacts it can have on teachers and students but it matters because “professional development is multilayered and focused on both our shared long-term goals and our individual needs” (Vogt and Shearer, 2011, p. 218). District and individual goals will not be achieved without the effective professional development. Teachers are students too and the effective implementation of PD can transform students and teachers.

Research has become easier for teachers and students.

With the increase in technology in the classroom, many teachers no longer have to sign out computer labs or laptops. Students no longer have to go to the library to conduct research or only use the computer three or four students at a time. Chromebooks and other one to one digital devices are now in the classroom waiting to be used. As a result, all of the teachers interviewed discussed using the Chromebooks in their classrooms for research and the artifacts collected reflected the students’ use of the Chromebooks for research. Not only do students use the technological devices for class projects but similarly to the research of Boyce, Mishra, Halverson, and Thomas (2014), I found that students also use the available technology for independent research outside of class projects. Students are naturally curious and if given the tools to find answers to their questions, they will.

Having the Chromebooks in the classroom makes integrating research into the curriculum convenient in addition to the availability of databases that enable students to research safely with an already narrowed down focus. Having databases that are safe for children to use limit the amount of information that they have to sift through in order to

find what they are looking for. The Chromebooks and databases that accompany them have expanded what teachers can do in the classroom, which has enhanced student learning.

Implications

Teachers should use the Chromebooks to engage all students, especially those who are typically disengaged.

Engaging students and holding their engagement throughout a unit is something that teachers are always striving for. When planning a unit, teachers are looking for activities that will interest their students. With the access of Chromebooks, teachers have something that will help keep students engaged including students that have a tendency to be disengaged during activities that happen in the classroom. With the endless ways that teachers can use the Chromebooks in the classroom, there are going to be purposeful applications and websites that will increase student engagement. There are different options teachers can use to help students research. Applications and websites support students with learning and studying classroom material and most engaging of all for students, they are able to communicate with each other about the project that they are working on using Google Drive. Teachers can also use interactive notebooks, QR codes, which are similar to hyperlinks, or have students take pictures of work in the classroom in order to increase engagement and student collaboration.

According to Kirsch et al. (2016), technology that is available in classrooms helps support the variety of learning styles and the technology improves participation. Students that are more inclined towards typing or creating projects online can now have that opportunity and choice. When looking at the artifacts that I collected, it is evident that

students have the opportunities to access pictures and videos that help keep them engaged in their research and in their creation of a final project. It was also evident that students use the Chromebooks to communicate with each other about their work. Offering advice to a peer digitally keeps both students engaged and helps enhance the work of both students.

Schools and districts should offer professional development that gives teachers choice and time to work.

Educators know how much students benefit from choice, within a reasonable limit, and independent time to work. If we know that this is beneficial for students, schools and districts must apply the same thinking when planning PD for their teachers. The data collected when I interviewed teachers indicated that the most helpful and impactful professional development opportunities occur when teachers are able to choose what they are going to talk about or work on and when they are actually given time to do it. When given time to work on a topic that is new to teachers, they are often given time to collaborate with colleagues. Toll (2014) support this type of learning in social contexts because teachers will be given multiple opportunities to construct their knowledge of when and how to use the Chromebooks in the classroom.

Many of the artifacts that I collected were planned by teachers working together or were learned at a workshop or other professional development activity. Not only do these worthwhile opportunities support the teachers in the districts, but also it gave them professional occasions to learn how to use the Chromebooks effectively in the classroom. When teachers are given opportunities to learn from one another and when they are given time to learn through inquiry and experimentation, teacher and student learning are

enhanced (Tondeur et al., 2016). Giving teachers these opportunities to collaborate with each other also helps them move away from the traditional model of teaching and opens them up to ideas of how to use the Chromebooks that are now available (Tondeur et al., 2016). Collaboration also includes sharing sources digitally and gives the teachers a chance to be the leaders of sharing how to use the technology in the classroom (Dexter, 2011). If the school district in this study wants the teachers to use the Chromebooks purposefully, sustained, effective professional development must be a staple of supporting their teachers.

Educators need to teach students how to engage in research.

As the ability to research has come closer and closer to the classroom and easier for teachers to incorporate in their instruction, the need to teach students how to research has become greater. Similar to not just using technology for the sake of using it, teachers need to do more than just research with the Chromebooks just because they are available. Teachers need to educate their students about how to research and critically analyze sources as soon as they start using the technological devices for research in the classroom. The 4th grade teachers spoke about choosing safe websites for their students to use and mentioned databases that the district had purchased access too. This is the first step in teaching students how to research because they need to know that research does not only involve Googling questions and getting answers. Research involves navigating databases and reading about their topic from multiple reliable sources. Leung and Unal (2013) found that Internet research using databases promotes critical thinking and reflection because students are able to read and analyze primary sources which allow them to create their own opinions about the information that is presented. Additionally,

many of the online databases Leung and Unal (2013) researched presented students with different perspectives on issues, promoting critical thinking. Researching allows students access to texts that will bring them to higher levels of critical thinking.

From the artifacts that I saw, 4th grade students were also very likely to copy word for word from an online source. Although they cannot be expected to use correct APA citations, this is a part of researching that teachers need to educate their students about. Researching should not involve copying the works of others. Students need to be able to incorporate their own ideas and be prepared to tell someone where they found their information. Even in 4th grade, teachers need to support students with starting these appropriate research practices because they are training the next generation how to research without just Googling or copying information that others have published. The Chromebooks have expanded the amount of research that students can conduct in the classroom. Students now have many answers to their questions at their fingertips. Educators need to teach them how to effectively and appropriately find what they are looking for.

Limitations

The limitations of this study include limited time and the amount of participants. The data collection period for this study was 6 weeks and data was collected from 14 fourth grade students and 6 fourth grade teachers. Due to this, the results of this study cannot be generalized to other schools, students, or grade levels. In addition, I was the only researcher collecting data for this study and was not able to gain other perspectives on the data that was collected and the conclusions that were made.

Suggestions for Future Research

The use of Chromebooks and other technological devices in the classroom will continue to evolve just as quickly as the technology itself evolves. As a result, there are plenty of areas for future research including exploring the attitudes of teachers in different grade levels about using one to one technological devices in the classroom. Teachers in the primary grades or at the high school level may have very different experiences and attitudes towards using digital devices in the classroom. In addition, I would be interested in exploring student attitudes towards using the Chromebooks in the classroom and specifically if students have different attitudes towards using the devices in the classroom depending on the subject being taught. Technology is used throughout the school day in a building that has one to one technological devices but in what subject area do students find that the Chromebooks are the most engaging and most helpful? The Chromebooks have the potential to enhance student learning and they will continue to change the classroom environment.

Overall Significance

The study is significant because it explores teachers' attitudes and use of one to one technological devices in the classroom, which is a growing trend in public schools. One to one devices have the potential to enhance instruction and student learning in a variety of ways. The data collected and the conclusions of this study show that Chromebooks increase student engagement and allow teachers to use the Chromebooks in many ways when they are provided with effective professional development. Other educators who have the opportunity to use one to one technological devices can benefit from this study by understanding the best ways to learn about using the technology in the classroom.

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Teacher Interview Questions

When answering these questions, keep in mind that you can provide with as much detail as you feel comfortable with. You may choose to skip any question.

Gender: _____

Years Taught: _____

1. Do you use chrome books for literacy instruction?
2. How do you define technological integration?
3. How do you feel about using technology for literacy instruction?
4. What technological programs do you use for literacy instruction?
5. How comfortable do you feel using technology in your daily life?
6. How comfortable do you feel using technology in the classroom?
7. Tell me about technological professional development at Rush Henrietta.
8. How has professional development impacted your attitudes towards using technology during literacy instruction?
9. How has integrating technology during literacy instruction impacted students?

10. Has technology impacted your literacy instruction? How?

11. How as technology impacted your literacy lesson planning?